

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number  
**WO 2005/078254 A1**

- (51) International Patent Classification<sup>7</sup>: **F01N 11/00**, 3/08, B01D 53/94, 53/96
- (21) International Application Number: **PCT/EP2005/001128**
- (22) International Filing Date: 4 February 2005 (04.02.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
10 2004 007 523.9  
17 February 2004 (17.02.2004) DE
- (71) Applicant (for all designated States except US): **UMICORE AG & CO. KG** [DE/DE]; Rodenbacher Chaussee 4, 63457 Hanau-Wolfgang (DE).
- (72) Inventors; and  
(75) Inventors/Applicants (for US only): **VOTSMEIER, Martin** [DE/DE]; Fechenheimer Weg 75, 63477 Maintal (DE). **THEIS, Juliane** [DE/DE]; Kardinal-Döpfner-Strasse 11, 63791 Karlstein (DE). **GOEBEL, Ulrich** [DE/DE]; Rathausstrasse 14, 65795 Hattersheim (DE). **GIESHOFF, Jürgen** [DE/DE]; Himmelauer Mühle 3, 63571 Gelnhausen (DE). **KREUZER, Thomas** [DE/DE]; Philipp-Reis-Str. 13, 61184 Karben (DE).
- (74) Agent: **HERRMANN, Reinhard**; Umicore AG & Co. KG, Patente, Postfach 13 51, 63403 Hanau (DE).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declarations under Rule 4.17:**

- as to the identity of the inventor (Rule 4.17(i)) for all designations
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations

**Published:**

- with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR DETERMINING THE INSTANT AT WHICH A NITROGEN OXIDE STORAGE CATALYST IS SWITCHED FROM THE STORAGE PHASE TO THE REGENERATION PHASE AND FOR DIAGNOSING THE STORAGE PROPERTIES OF THIS CATALYST

(57) Abstract: When a nitrogen oxide storage catalyst is being regenerated, the regeneration may be terminated for example as a result of a premature load change in the engine, which can lead to incomplete emptying of the storage catalyst. The residual filling level which remains in the catalyst following an incomplete regeneration of this nature is used as the starting value for calculation of the filling level during the next storage phase. After incomplete regeneration, the nitrogen oxide conversion rate is initially greater than would be expected, on account of the residual filling level. By taking this increased conversion rate into account when calculating the filling level during the storage phase, it is possible to further improve the accuracy of the calculation.

WO 2005/078254 A1